The Boston Medical and Surgical Journal

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May 5, 1921

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Original Articles.

VITAMINS IN MILK.

BY M. J. ROSENAU, M.D., BOSTON,

Professor of Preventive Medicine and Hygiene, Harvard Medical School.

MILK is rich in all of the known vitamins. We would rather expect this to be the case, for the mammalian suckling must depend upon milk as its sole source of food supply for a fairly long period of time. Milk, in fact, is the only single article of food that fairly represents a complete diet. Milk, however, is not "the perfect food" that it was once thought to be, especially when used as the sole food for adults; this is for the reason that it contains no roughage, is deficient in iron, and is so dilute that it requires clumsy amounts to furnish the necessary nutriment. Milk is unexcelled for growing children; it has no equal for the promotion of growth and nutrition. Furthermore, cow's milk is rich in calcium in a readily available form—children need five times as much calcium per kilo of body weight as adults. In order to supply this important salt to growing bones and developing teeth, as well as to furnishing vitamins for the utilization of food, a child should drink a quart of milk a day. It will not then suffer from a deficiency disease. In this sense, milk is well called a protective food.

Milk is not equally rich in all vitamins, but contains these essential accessory dietary factors in variable amounts. This is one of the newer facts that has recently been disclosed. Thus, Hart, Steenboch and Ellis,[1] and also Hess, Unger and Supplee,[2] have shown that the antiscorbutic value of milk depends almost entirely upon the fodder of the cow. Hess, Unger and Supplee have shown that cows that had been fed for a period of three weeks on fodder which was almost completely devoid of anti-scorbutic vitamin, produced milk that was almost devoid of this factor, although of normal caloric value and adequate in fat, protein and carbohydrate content. Hess, in his recent Harvey Lecture, stated that such results may have far-reaching dietary significance, and he raises the question whether "winter milk" supplied by stall-fed cows is a well balanced and complete food. It is quite possible that it may become a part of dairy inspection to know the adequacy of the fodder as well as the sanitary conditions. It is well known that the cows producing certified milk are not allowed to graze. It is now necessary to reëxamine the conditions surrounding the requirements of certified milk with reference to this very important factor.

Human milk, no doubt, also varies with the nature of the mother's food, and in some instances is deficient, owing to eccentricities of diet or to poverty. Alonzo Taylor, in his Cutter Lecture on Preventive Medicine and Hygiene, at Harvard, reported as a result of observations in the war zone, that babies fed at the breast of mothers who had a diet deficient in antiscorbutic vitamin soon developed symptoms of scurvy. Furthermore, that when a diet rich in antiscorbutic vitamins was given such a nursing mother, considerable time elapsed before they appeared in the milk; in other words, they were first utilized by the mother before there was sufficient to give to the baby.

The study of vitamins is still in its infancy. Much that is affirmed today may be denied tomorrow. We do not know the nature or composition of these "substances"—we know them only by their effects. It is clear that they are not amins, and therefore the term, from the chemist's standpoint, is ill chosen, but the word vitamin, introduced by Funk in 1911, is expressive and attractive, and is now firmly planted in the language.

Vitamins are synthetized in the plant kingdom and are not made in the animal world. Even such unicellular plants as yeast cells are able to produce antineuritic vitamin (water-soluble B). It is now clear that man is not able to elaborate vitamins, and he is also unable to store them; this applies likewise to other members of the animal kingdom, so far as the subject has been studied. This has a very important and practical consideration, for we live a hand-to-mouth existence so far as these essential dietary factors are concerned. It again proves that animals are parasites living upon the vegetable kingdom. In other words, our health, as well as our power to utilize food, depends upon the daily intake of these unknown dietary factors. Life itself is threatened by deprivation of them for any length of time. Hence, the vitamin problem is of daily and universal interest to all persons.

The quantity of vitamins in plants probably varies with the soil in which they are grown, and animals in turn suffer by lack of, or profit by richness of, vitamins in plant foods. One of the best instances of the relation of soil to plant composition is in the case of endemic goitre, which is due to a lack of iodin in food or water, or both. This is one of the clearest cut deficiency diseases brought about by the lack of a single element in food and drink. It can be prevented, and even cured, by the administration of small amounts of iodin. The classical work on this subject, by Marine, is convincing. Iodin, of course, is not a vitamin, and it is not likely that the chemical composition of vitamins, when disclosed, will prove to be a single element or even a simple compound.

At least three vitamins are now distinguished: (1) Fat-soluble A, which is responsible for xerophthalmia; (2) water-soluble B, or antineuritic vitamin, the lack of which causes beriberi; and (3) antiscorbutic vitamin, or vitamin C, the lack of which induces scurvy.

Milk is usually rich in all three of these vitamins. It is unusually rich in fat-soluble A, contains an abundant amount of water-soluble B, and a variable, but ordinarily sufficient quantity of antiscorbutic vitamin. It has, therefore, been well designated by McCollum, a protective food, in that it protects against all of the known deficiency diseases.

Mellanby's observations on dogs indicate that fat-soluble A is associated with rickets. These observations are accepted by the Medical Research Committee of Great Britain. Many now regard fat-soluble A as synonymous with antirachitic vitamin. It seems clear that this vitamin is a factor in rickets, but whether the dominant factor, is still to be determined.

In the present state of our knowledge, it is a safe rule to eat a varied and generous diet. This advice applies with special force to growing children. "Natural" foods should be included in the diet, especially milk and also eggs, green leafy vegetables, cellular organs of animals, and fruits.

Artificial color standards are responsible for at least one deficiency disease. The false notion that a substance that is white is also pure has misled entire nations into dietetic errors. This is especially the case with polished rice and beriberi. The term "pure white" is misleading. White foods are not necessarily clean foods or pure foods. This lesson, with reference to polished rice, highly milled flour, and other prepared articles of diet, usually of a carbohydrate nature, is still to be learned. It will take a long time for people to learn that things may look clean, but not really be clean; in other words, there is a distinction between biologic cleanliness and physical or aesthetic cleanliness. It took a long time for sanitarians to prove that there is no relation between odors and disease. We now know that our sense of smell is a poor sanitary guide. There is a similar situation with reference to our color sense. To depend upon the color of food is a false standard. In the present state of our knowledge, the natural color, whatever it may be, is probably the safest, and when the subject is properly understood, a grayish colored rice will look more appetizing than "pure" white. There can be no hygienic defense of the artificial coloring of food used to cover imperfections or to hide inferiority. The natural color of milk varies. "Winter milk" and milk of stall-fed cows is apt to be dead white, whereas the milk of pasture-fed cows has a yellowish tinge, and the butter made from such milk has the glorious golden hue of spring butter. It is well known that the most active fat-soluble vitamins are those contained in colored fats.

Unbalanced diets are not simply harmful in a negative sense because they lack something, but are positively harmful. Some years ago, when working upon the subject of beriberi, I found that chickens fed upon a diet of polished rice or some other cereal preparation consisting almost wholly of starch in a state approaching chemical purity, died quicker than control chickens given nothing whatever to eat; that is, the starving chickens lived longer than those having all they could eat of the above mentioned purified food stuff.

Most of the deficiency diseases are chronic, with long periods of incubation. There must, therefore, be a prolonged period of subnutrition during which the individual does not reach the threshold of clinical manifestations. During this time, such a person is "below par," is, perhaps, more susceptible to infection, and certainly has a diminished factor of safety. Hess states that, "Clear-cut disorders should not be regarded as the most common or important result of food deficiencies. It should be realized that a lack of these essential food factors generally does not bring about typical pathological states, but obscure alterations of nutrition, ill defined functional disabilities, which cannot be characterized or even recognized as disease. It is such incomplete larval forms of the deficiency disorders to which physicians will have to address themselves."

INFLUENCES TENDING TO HARM VITAMINS.

In view of the facts above stated, it is clear that the stability of vitamins in our food has become a problem of fundamental importance. It is necessary to preserve foods in order to tide over the seasons, to feed metropolitan cities, and to promote development in non-agricultural regions. The ideal is to preserve food so that the vitamin content will also be preserved sufficiently for dietetic purposes. It has recently been discovered that it is possible to preserve almost any food by various processes so that the vitamin content is not injured to any serious extent. The age of the food has always been ascribed as an important factor, hence the emphasis commonly placed upon fresh food. Now we know that many foods, including milk, may be preserved in a way to conserve their original vitamins.

It has long been believed that drying, salting, and heating, which are the usual processes of preserving food, destroys the antiscorbutic vitamin, but the work of Hess makes it clear that oxidation is probably the prime factor; in other words, it is possible to dry, can or pickle food in such a way as to preserve sufficient of the antiscorbutic vitamin for all practical purposes. The antiscorbutic vitamin is the frailest of them all. Hess further clearly shows that neither the heating, ageing, or drying of milk seriously affects this vitamin in the absence of oxygen.

EFFECT OF HEAT UPON VITAMINS IN MILK.

We studied the effect of heat upon the vitamins in milk, because of the importance of the problem from a practical and academic standpoint. Most of our work was concentrated upon fat-soluble A, but we give a summary of our present knowledge of the effect of heat upon the vitamins in milk, in which our observations are incorporated.

It has long been known that the effect of heat upon vitamins varies with the reaction and other factors. Most vitamins are more readily affected by heat in an alkaline medium than in an acid one. Fortunately, most of our foods are acid. Milk is acid from the time it leaves the udder. Fresh cow's milk has a p^H value of 6.5 to 6.8; fresh mother's milk varies between 7.1 and 7.6. Owing to the formation of lactic acid, the hydrogen ion concentration increases as the milk ages.

In a recent article, Drummond[3] summarized our present knowledge of the effects of heat upon vitamins. The data is given in the following table.

	VITAMINS		
STABILITY	Fat Soluble A	Water Soluble B	Antiscorbutic C
To temperature	Stable at 100° C.; probably stable at 140° C.	Comparatively stable at 100° C.; slowly destroyed at 120° C. and above.	Gradually destroyed above 50° C.; rapidly destroyed above 80° C.
To alkali	Stable in cold; possibly in hot.	Slowly destroyed in cold; rapidly in hot.	Rapid destruction even in cold.
To acids	Probably stable.	Comparatively stable.	Comparatively stable below 50° C.

It is well known that fat-soluble A is very resistant to heat. Osborn and Mendel, and also McCollum and others, have shown that this vitamin found in butter fat will resist the temperature of live steam without destruction. Practically all observers agree that long boiling with acids does not harm water-soluble B (antineuritic vitamin). Dry heating at a temperature of 100° C., with free access of air, only very slowly destroyed fat-soluble vitamin. The results thus far obtained emphasize the importance of taking full account of the time as well as the temperature of heating, and of the initial concentration of the vitamin in the food, as well as of the opportunity for previous storage of the vitamin by the test animal. It is therefore clear that the heat used in pasteurizing, boiling, evaporating, condensing and drying milk has very little effect upon these two vitamins.

Our studies on the effect of heat upon fat-soluble A in a large number of samples of evaporated, condensed and dried milks confirm this fact. Dr. W. D. Bigelow, Director of the Research Laboratory of the National Canners' Association, by means of ether extraction, obtained milk fat in a high state of chemical purity from samples of evaporated and condensed milk. It was found that these chemically pure fats both prevented and cured xerophthalmia in rats with practically the same potency of the original preparations of evaporated and condensed milk from which they were obtained. The tests with the extracted fats were conducted by Dr. E. V. McCollum at the laboratory of the School of Hygiene and Public Health, Johns Hopkins University, while the control tests with the original evaporated, condensed and dried milks, were made by the writer of this article in the laboratory of Preventive Medicine and Hygiene, Harvard Medical School.

With regard to the effect of heat upon antiscorbutic vitamin, it has been shown that the duration of the heating process is of greater importance than the degree of temperature to which the food is subjected; for example, Hess states that milk that has been heated to 145° F. for 30 minutes has lost more of its antiscorbutic potency than milk that has been raised to 212° F. for a few minutes. It is further believed that some of the contradictory observations connecting milk with infantile scurvy may be explained, in part, by the variable amount of this vitamin in milk depending upon the feed of the cows, and again upon the variable effect of heat, depending not so much upon the temperature, nor the time of heating, but especially upon the chances of oxidation during the process of heating. We now know that dry milk may retain its antiscorbutic virtue in spite of drying, canning and ageing, especially if well packed and hermetically sealed. It loses its potency after it is exposed to the air. Sweetened condensed milk which Hess found to contain antiscorbutic vitamin, "is zealously protected from access of air in the course of its manufacture." Alonzo Taylor also adds evidence to the fact that the antiscorbutic vitamin in canned milks is not necessarily destroyed, from the fact that in the war zone this milk prevented, and even cured scurvy. It was found that it takes about eight ounces of condensed milk, which is the equivalent of 20 ounces of milk, per day, to cure infantile scurvy.

Canned milks and dried milks, then, retain the fat-soluble A and water-soluble B vitamins in almost their original potency. The only vitamin in these preparations that may be affected is the antiscorbutic vitamin. The amount of this in canned milk will vary with many factors, primarily, the amount in the original milk, and, secondarily, upon the process of heating and evaporation, with special reference to oxidation.

REFERENCES.

[1] Jour. Biol. Chem., July, 1920, 42, 383.
[2] Jour. Biol. Chem., 1920, 45, 229.
[3] Lancet, 1918, ii, 482.

A REVIEW OF THREE HUNDRED CASES OF BLOOD CHEMISTRY.

BY EDWARD B. BIGELOW, M.D., WORCESTER, MASS.

THIS is the report of a review of the consecutive, chemical examinations of blood from the laboratory of the Worcester City Hospital during a period of eleven months. These specimens of blood were obtained from three hundred adult patients and include the examinations of 458 different specimens. The patients were nearly all hospital cases and seriously sick at the time of examination. The tests were not made routinely by any means upon every admission, but upon selected cases only, whose clinical condition at the time of the examination suggested the possibility of findings that would be of assistance in diagnosis, prognosis or treatment. Oftentimes the negative findings were of as much assistance as the definitely positive results. The blood chemistry report was the most important single factor of our investigation in some cases, but in a considerable majority of the three hundred, it was of minor interest, not to be ranked with the routine history, physical or urine examinations, but rather to be included in the class of the Wassermann reaction, the phthalein and Schlayer nephritic tests, which give assistance in the more complete consideration of a patient's condition.

An estimation of the blood sugar, urea nitrogen and creatinine was made in each case. In addition one hundred and fifty-six cases had an alkali reserve and twenty-nine an uric acid determination. The sugar, urea nitrogen, creatinine and uric acid were determined by the method of Folin and Wu,[1] and the alkali reserve by the titration method of Van Slyke, Stillman and Cullen.[2]

The blood specimens were obtained before breakfast after a fourteen-hour fast. Powdered potassium oxalate was employed to prevent clotting. Normal blood values for sugar are .09 to .12 of one per cent, for urea nitrogen 14 to 17 mg., for creatinine 1 to 2 mg., for uric acid 1 to 3 mg. per 100 c.c. of blood; and 80 to 53 c.c. for alkali reserve expressed as the CO_2 combining power per 100 c.c. of plasma. One hundred and seven patients had one or more constituents that were pathological in amount.

CREATININE.

The most striking group with positive findings was that of eighteen cases that had a creatinine content of 2.5 mg. or more per 100 c.c. of blood. The creatinine of the blood is increased only in certain severe nephritic conditions. It is almost altogether of endogenous origin and therefore cannot be appreciably lessened by a low protein diet. Rarely does recovery take place after this constituent has once been retained in large amounts. Death is nearly always but a matter of days or weeks. This has been demonstrated by Meyers in a report of eighty-five cases with a creatinine value of 5 mg. or more, all of whom died except four.[3]

These eigheen cases are summarized in the accompanying table. All except one of them died within a short time. Number 17 is alive now, more than a year after these blood findings, but has, and still continues to require institutional care. These cases from a clinical point of view were recognized in each instance as seriously sick. However, among these three hundred cases, there were several other cases of nephritis that were apparently as sick as this group of patients at the time of their blood examinations, but without any increase in the retention of creatinine and with ensuing improvement. Therefore, the recognition of high creatinine values is of much importance from a prognostic standpoint. It is of interest to note in addition that three of these cases had no casts in the urinary sediment, one had no albumin, and in three the specific gravity was above 1.014, emphasizing the fact that at times negative urinary findings may be misleading in some cases of severe nephritis.

UREA NITROGEN.

Although the normal value of urea nitrogen is from 13-17 mg. per 100 c.c. of blood, anything below 25 mg. in this hospital series I have found to be of small clinical import and have not included as among the cases with pathological findings. Urea nitrogen is largely of exogenous origin, in contradistinction to the endogenous origin of creatinine, and an increase of retention up to 25 mg. can generally be overcome, at least to a degree by dietary restrictions. In the table, all of the cases of high creatinine values were accompanied by high retention values of urea nitrogen. As can be noted in the table, there is no parallelism between the values for urea and creatinine, from the determination of one of these constituents the other cannot be estimated with any accuracy.

TABLE.

Case	Age	Sex	Creatinine Mg. per 100 c.c. Blood	Urea Nitrogen Mg. per 100 c.c. Blood	Blood Sugar per Cent.	CO$_2$ Combining Power c.c. per 100	Phthalein 2 Hrs. per Cent.	Blood Pressure	Days Before Death
5 J. Z.	29	M	24	214	0.15	29	Less than 10	165/115	7
8 C. H. T.	40	M	6	86	0.14		Less than 10	218/152	23
12 M. R.	36	F	5.6	219	0.12			200/160	12
17 M. F.	28	F	2.6	35	0.09	39	18	160/110	Still living
34 C. W.	67	M	10.8	118	0.13			200/110	1
54 G. H.	54	M	6.3	150	0.13	44	5	220/118	49
61 C. S.	48	M	5	75	0.20	24	Trace	190/105	103
63 A. C.	73	M	3.1	66	0.16	53		160/94	12
67 M. L.	47	M	3.2	75	0.14			98/64	2
92 P. T.	51	M	3	60	0.10		0	230/144	9
99 J. J.	50	M	5	120	0.17			220/160	3
108 M. O.	52	M	15	150	0.16	26	Trace	162/100	35
138 J. P. R.	64	M.	3.7	60	0.20		0	225/140	25
170 E. L.	40	M	2.5	100	0.22	42		112/64	2
183 J. C.	56	M	7.5	150	0.16	65		218/100	1
226 W. B.	64	M	5	100	0.12	38	0	140/78	19
241 McK.	25	M	5	150	0.13	27		132/80	7
277 A. N. N.	36	F	6	75	0.14	22			2

Besides these eighteen cases of high urea values there were thirty-five others among the three hundred that had from 25 to 60 mg. of urea and a retention of creatinine that was less than 2.5 mg. Of these thirty-five additional cases, fifteen died within a few weeks and most of the remainder were clinically seriously sick with chronic organic ailments, among which nephritis was the primary condition or a serious complication.

NEPHRITIS.

Although in this series there was a large proportion of cases of chronic nephritis, several of them with acute exacerbations, there was only one case of acute nephritis, so-called, with general oedema and albumin, blood and casts in the urine with no apparent etiology other than exposure to cold. The only change in the blood values was an urea nitrogen of 30 mg. There was a marked subsidence of symptoms in the next ten days and with it the urea nitrogen sank to 16 mg.

While discussing the cases of nephritis with positive blood chemistry findings, several other cases in the series with normal values are noteworthy. Two cases, one followed for twelve years and the other for six with very large traces of albumin at each of many examinations, have continued to work during the time and have no blood nitrogen retention, a good phthalein excretion and response to the Schlayer two-hour test. The same findings were present in three other cases, who have been under observation a shorter length of time. The blood chemistry in these cases was a functional test of value, taken in conjunction with other renal function tests and assisted to a truer insight into the condition of these patients, demonstrating that, although the kidneys were at fault in the particular of a large, persistent albuminuria, in several other particulars they were capable of normal excretion.

Another case of apparently severe chronic nephritis, who entered the hospital with general anasarca of three months' standing, a large trace of albumin and many casts in the urine, was discharged much improved after remaining seven weeks. At the height of his symptoms he had no nitrogen retention in the blood and his phthalein excretion was 44% in two hours, but the kidneys were unable to excrete salt in appreciable amounts by the Schlayer two-hour test diet even after the disappearance of the oedema. Demonstrating again that examinations for nitrogen retention in the blood, phthalein and salt excretion are necessary in certain cases to determine what particular function of the kidney is at fault.

Among the patients in this series brought into the hospital in an unconscious condition, two were of especial interest, because they had a history of sudden onset and were having repeated convulsions, apparently the picture of the symptom iomplex commonly attribhted to achte uremia. Neither had any blood urea nitrogen or creatinine retention and both made rapid symptomatic recoveries from their acute attack, although subsequent urine examinations proved them to be cases of chronic nephritis with good renal functions. In four other cases with convulsions and high urea and creatinine retention values, death ensued soon after the onset of the convulsions. Seemingly, the lack of a nitrogen retention in the blood of cases of uremia may be considered a portent of good omen in prognosis.

URIC ACID.

No conclusions can be drawn from a review of the blood uric acid determinations in the twenty-nine cases. There was but one case of gout in the series. In this case, upon the first determination, when there had been no acute gouty attacks for months, and upon the second determination some nine months later, and as it happened preceding another acute attack by five days, the uric acid was somewhat increased, being 3.8 mg. per 100 c.c. on each occasion. It must be added that this case of typical gout was also one of hypertension with a systolic blood pressure of 190 and a diastolic of 120, no albumin, a few casts, and a phthalein excretion of 35% in two hours. These findings of an increase of the uric acid are compatible also with those of an interstitial nephritis as well. As pointed out by Meyers, Fine and Lough,[4] uric acid may be increased in interstitial nephritis before there is any retention of urea or creatinine and its quantitive determination may be employed as an early diagnostic sign of the condition.

MYOCARDITIS.

There were twenty-nine cases with no arterial hypertension and with no nitrogen retention in the blood, in whom the primary diagnosis was myocarditis, which was severe enough to necessitate hospital and bed treatment. At entrance, in several of these cases with markedly incompetent hearts, the phthalein excretion was so low, that had that been the only test employed to judge of the ability of the kidneys in excreting deleterious products, their competency also would have been considered extremely poor. The low percentage of phthalein excretion was due to secondary passive congestion of the kidneys, and with improvement in the cardiac condition this percentage was much increased. In one case of auricular fibrillation with dyspnoea, anginal pain and vomiting, but no oedema, the phthalein excretion in two hours was less than five per cent., at the same time, there was no nitrogen retention at all, though the percentage of blood sugar was 0.14. In a short time she was symptomatically much improved and in ten days the two-hour phthalein was 35%. So that, though the blood chemistry examination was negative in these cases, in certain of them it was an index of kidney function, that was of more value in prognosis than the phthalein excretion.

ACIDOSIS.

Acidosis is a condition in which the normal alkalinity of the blood is lowered. The blood actually never becomes acid. This diminution in alkalinity is brought about, as in diabetes, by an increased formation of acid bodies or, as in some cases of nephritis, by a lack of elimination of certain waste products. As previously stated, the normal combining power of the blood for carbon dioxide is from 80 to 53 c.c. per 100 c.c. of plasma. When the range is from 53 to 40 there is a moderate acidosis, no pronounced symptoms; below forty a severe acidosis, a dangerous lowering of the alkali reserve.

Frequent determinations of the alkali reserve of the blood are of importance in the treatment of diabetes mellitus during the stage of decrease in the diet and the determination of the carbohydrate tolerance. It is a much more satisfactory and precise test than the presence or absence of acetone and diacetic acid in the urine. These bodies may be present in the urine and the alkali reserve of the blood show no acidosis. In this series, with this test as an index of the absence of a severe acidosis, the diabetic cases were treated with more assurance and the decrease of diet persisted in, even though there was a marked acetonuria.

Chace and Myers[5] have demonstrated that fatal cases of chronic nephritis with marked nitrogen retention show a severe acidosis. By reference again to the table this is seen to be the experience in this series. The exceptions, that is values above forty, were in cases receiving soda bicarbonate medication at the time of the blood examination

In this series of 159 cases, in which the alkali reserve was determined, in only seven others than in the table was it 40 or below. One case of nephritis with an alkali reserve of 35 and without nitrogen retention died in three weeks after the determination; a second case with a value of 31 was in a pregnant woman with lethargic encephalitis, who also died in three weeks; a third with 27, a patient already mentioned in the review, was a case of uremia in convulsions, unconscious and without nitrogen retention and made a good recovery. The four remaining cases each had an alkali reserve of forty. One man convalescing from pneumonia (after treatment) had a normal reading in a few days; a woman, with pernicious vomiting of pregnancy, made a good recovery; the other two were cases of diabetes undergoing the Joslin treatment at the time, who were quickly relieved of the condition without the administration of alkalies, when the condition was recognized by the routine blood examination.

PREGNANCY.

Seventeen cases of pregnancy are included in the series. In the four normal cases the blood findings were within normal limits with the exception of the urea nitrogen, which was low in each instance, a fact that has been pointed out by Folin.[6] One case of placenta previa had a urea nitrogen content of 33 mg. per 100 c.c. and went on to a normal convalescence. The case of encephalitis lethagica of fatal outcome without retention of sugar or nitrogen, but with an alkali reserve of only 31, has been noted previously. One case of hydramnios had normal blood values.

There were ten cases of toxemia of pregnancy of the pernicious vomiting type. A series of extremely sick patients. The blood examinations gave figures within normal limits, except that one case at one time had an alkali reserve of 40 and a blood sugar percentage of 0.17. Tileston and Comfort[7] report normal figures for urea nitrogen in these cases. A high ammonia nitrogen coefficient in the urine was found to be a more dependable, positive index of the severity of the condition as has been previously demonstrated by Losee and Van Slyke.[8]

MISCELLANEOUS CASES.

There were three cases of brain tumor, two as proven by operation and one by post-mortem examination. The chemical examinations were negative, except that in the case that died and in whom small, red kidneys were found at autopsy, the last blood test two days before death showed a sugar percentage of 0.16. One case had an intermittent glycosuria and a normal blood sugar value.

There were eight cases in whom the final diagnosis was bronchial asthma. The blood examinations were made during the clinical work-up. The values were normal in all.

Of eight cases of hypertrophied prostate, in only one was there any abnormality in the blood examinations, a urea nitrogen value of 30 mg. per 100 c.c. No radical treatment was caried out and the patient was discharged with an amelioration of symptoms. There were also four cases of septic infection of the bladder or kidneys. One had a urea nitrogen of 32 mg. and died within a short time.

Fifty-six cases had a blood pressure of at least 165 m.m. Hg. systolic or 110 diastolic, besides those listed in the table. Eight of these cases died within a short time after coming under observation. Of these fifty-six cases, with the exception of two with abnormally high urea values, none had more than a miner degree of nephritis. The blood chemistry was one of the functional tests employed in attempting to differentiate these cases as either primary hypertension, or hypertension with myocardial complications from those that had a nephritis in addition.

Of malignant disease there were nine cases that had progressed to cachexia when the blood was examined. In only one was the blood sugar above .11 of one per cent. and then the value was .18. Four had urea nitrogen figures of from 25 to 42 mg. per 100 c.c.

Among six cases of severe anemia, five of them of the pernicious type, the blood findings were normal with the exception of one with 25 mg. of urea nitrogen. One case of Hodgkin's disease had normal figures.

There were four cases of cerebral infection, who were unconscious at the time the blood examinations were made. Two of them proved to be tubercular meningitis and two lethargic encephalitis. Three had urea nitrogen values of 25 mg. or more and three had a hyperglycemia

Five cases of severe furunculosis without glycosuria had normal blood chemistry findings. These tests were performed with the idea that possibly a hyperglycemia might be discovered indicating a prediabetic state, which anticipated, might under appropriate treatment, clear up the furunculosis and avoid severe manifestations of the disease.

DIABETES.

In no group of cases among the three hundred were the blood chemistry determinations of more value than in the twenty-five of diabetes mellitus. It is now generally recognized that in the treatment of this disease it is fully as important to moderate the hyperglycemia as to clear up the glycosuria. Freedom from glycosuria is no longer the goal in treatment. Repeated determinations of blood sugar are therefore necessary as guides to obtain the best result in treatment.

Before instituting treatment in these cases an initial blood chemistry examination, including a determination of the alkali reserve, was an important index of the degree of severity of the individual case. Frequent blood analyses were in order, to check up the degree of acidosis and the level of the blood sugar, while the Allen-Joslin treatment was being carried out to clear up the glycosuria, then during the determination of the tolerance for food and later in attempting to moderate the hyperglycemia.

Three cases of diabetes, who had their food tolerance determined and kept within their limits of diet, immediately, upon the onset of influenza, lost their tolerance altogether and again developed a glycosuria, which persisted during the febrile state and for a few days afterward.

One case with a marked family history of diabetes mellitus was found to have a slight persistent hyperglycemia without glycosuria at any time. Upon the application of the blood sugar tolerance test, as described by Janney and Isaacson,[9] at the end of the first hour the glycemia was .21 of one per cent. and a trace of sugar in the urine, at the end of the second hour it was .12 and still lower at the end of the third and fourth hours without any more glycosuria. After following advice as to a more moderate diet, the blood sugar level diminished and the development of diabetes perhaps has been averted or postponed.

None of the cases in this series came within the classification of renal diabetes. However, However, five of them had a glycosuria without a hyperglycemia. This glycosuria in all of them cleared up within a few days without dietary restrictions.

HYPERGLYCEMIA.

Besides the diabetic cases, there were fifty-two others in the series that had an hyperglycemia of .13 of one per cent. or more. Many cases of severe nephritis have high figures for blood sugar as well as for nitrogen. The table demonstrates this, for among those eighteen cases of nephritis with high urea nitrogen and creatinine values, fourteen also have a high value for sugar. Of the remaining thirty-eight cases with a hyperglycemia, twenty-three are cardio-renals, which bears out the statement of Williams and Humphreys,[10] that high blood sugar levels are associated with severe phases of this condition.

CONCLUSIONS.

From a review of the blood chemistry in this series of three hundred patients, it is to be concluded, that in general, these examinations, whether they prove to be normal or abnormal, are functional tests of value in the fuller consideration of cases. Prognosis is extremely poor when there is a high retention of creatinine, and rather poor when a high urea retention. The determination of the alkali reserve is valuable in diabetes mellitus and to a lesser degree in nephritis. Repeated blood sugar determinations are invaluable as guides in the treatment of diabetes mellitus.

REFERENCES.

[1] Folin and Wu: Jour. Biol. Chem., Vol. xxxiii, p. 81, May, 1919.
[2] Van Slyke, Stillman and Cullen: Jour. Biol. Chem., Vol. xxxiii, p. 167, May, 1919.
[3] Myers: Jour. Lab. and Clin. Med., Vol. v, p. 566, June, 1920.
[4] Myers, Fine, and Lough: Arch. Int. Med., Vol. xvii, p. 570, 1916.
[5] Chace and Myers: Jour. A. M. A., Vol. lxxiv. p. 641, March 6, 1920.
[6] Folin: Jour. A. M. A., Vol. lxix, p. 1212, Oct. 13, 1917.
[7] Tileston and Comfort: Arch. Int. Med., Vol. xiv, p. 620, 1914.
[8] Losee and Van Slyke: Am. Jour. Med. Sci., Vol. cliii, p. 94, 1917.
[9] Janney and Isaacson: Jour. A. M. A., Vol. xx, p. 1131, April 20, 1918.
[10] Williams and Humphreys: Arch. Int. Med., Vol. xxiii, pp. 537 546, 559, 1919.

THE NEED OF HEALTH CENTRES.*

BY EDEN V. DELPHEY, M.D., NEW YORK,

Chairman Compulsory Health and Workmen's Compensation Insurance Committee of the Medical Society of the County of New York.

FROM time to time, various and sundry amateur and professional uplifters have endeavored to prescribe for the political, industrial and bodily ills of mankind, and not infrequently their prescriptions are based either upon an inaccurate and incomplete investigation of all the facts in the case, with a resulting inaccurate diagnosis of the underlying pathological condition, or upon an incomplete appreciation of the collateral effects upon not only those whom they wish to assist, but also upon those whom they wish to assist them. In endeavoring to arrive at a proper conclusion as to the desirability of any proposition for the betterment of mankind, it is absolutely necessary to very carefully consider and weigh all the facts in the case, their relation to each other and to the surrounding elements of society: the nature and variety of the employment, the income, the mode of living, sanitation, environment, cost of food and clothing, medical attendance, drugs and medicines, the amount spent for these and other luxuries, for extravagances, for dissipations—mild, such as the movies, or more serious, as for alcoholics, for irregularities, such as gambling or immoralities. Until such a complete survey has been made, it will be utterly impossible to determine absolutely the need of the proposed measure. In making such a survey, it is imperative that the surveyors shall be thoroughly competent for the purpose—that they shall be those with the inclination, training, and capability for the work, and not, as was the case a few years ago, when it was proposed to utilize fourth-year high school students in making a sanitary survey of the West Side. In medical matters, it is necessary that the surveyor shall be a broad-minded, ripened, and experienced physician, in order that he may be capable of determining and weighing all the facts and of ascertaining whether or not the person is really in need of medical care and whether he will accept it, or whether he prefers to depend on home-treatment, quack medicines, "new thought," or on "Christian Science." In promoting the propaganda for health centres, these conditions do not seem to have been fulfilled. Moreover, the propagandists seem not to have been able to appreciate the fact that prevention is better than the cure; that their Utopian schemes are not calculated to prevent the incidence of diseases which they want to relieve after they have already occurred. The sun, as he goes his daily rounds, does not look down upon a race which has not been sorely tried by impractical experiments to uplift and reform. From the beginning of time, all men have had a willingness, if not an ambition, to help the poor and needy. But they usually prefer to help someone at a distance—like sending red flannel shirts to the Hottentots in Africa—and not to help those nearby; to attend to some other work, and not to the work for which they were constituted and created. But the poor have not been helped; on the contrary, we are all being constantly and needlessly oppressed. Millions willing to work and care for themselves, have been impoverished and pauperized, cruelly, needlessly, and wickedly, by those who have pretended, and sometimes honestly, to want to help them.

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* Read before the Medical Society of the County of New York at its regular meeting on December 29, 1920, and published in the New York and Illinois State Journals of Medicine.

The researches of your committee have shown that while the number of physicians in the rural districts is less than formerly, this change is due to the rural physicians moving to the cities and towns, because there they can more easily earn a reasonable living without such an immense expenditure of energy and vitality; and because there are fewer recent graduates going to the rural districts. These results are due to the more strenuous life of the medical practitioner in the rural districts; the question of fees and collections; and to the fact that the true physician goes to see a sick person, whether he can pay or not. The lessened number is also due to the law of supply and demand, and whether the person demanding is willing to pay a reasonable price for the supply. The spreading abroad of the fact of the lessened number of physicians in the rural districts, is due to the desire of the amateur and professional uplifters to arouse the enthusiasm and support of those who have been deemed to be "amiable weaklings in business matters, easily gulled by piteous tales and flattering remarks about the magnanimity of the profession," and thus to inveigle them into supporting an impracticable and dangerous scheme. The general medical practitioner is the most altruistic person on the face of the earth—he is constantly striving to get and to keep his patients well and thus to lessen his own income. This is after he has entered into the practice of his profession, but the average man is by nature concerned, primarily and chiefly, in those things which pertain to his own personal advantage. Almost no one, except the theological student, goes into a profession purely and solely 'for the glory of God and the benefit of mankind,'' and if the obstacles to the successful practice of medicine are increased by such schemes as compulsory health insurance, health centres, and state medicine, the number and quality of the men who will choose the medical profession will be materially reduced, and when that happens, the whole people will suffer from their inefficiency.

In the reports received in response to our circular letter, your committee has found that on the average there are two and one-half hospitals in each county, and that these have the confidence and support of the people; that the people in the rural districts get to their physicians more easily, and the physicians to their patients more easily, except when confronted by the deep snows of winter, on account of the use of automobiles and the "state roads" through the state. The majority of cases do not need the so-called advantages of "group medicine," nor of hospital treatment. All they need is a good, clean, well-lighted and well-ventilated room, good medical attention, and someone who is gentle, kind, neat, and fairly intelligent, to take care of and to wait on them. All of these can be as well obtained in the rural districts as in the most aristocratic city hospital, where the expense per capita of keeping the patients is higher than it would be in the highest priced hotel in New York City. Moreover, even if it were necessary to have all the highly qualified specialists specified in the propaganda for health centres, where would they be able to get real and not pseudo-specialists? Would they be made over night, as it is reported some of the specialists in this city are? Again, would the specialists agree on the diagnosis and treatment? If not, what sort of a predicament would the poor man be in? Suppose the ophthalmologist insisted that he had oculomotor imbalance and must have his muscles cut; the rhinologist, that he must have his tonsils, adenoids and turbinates removed and his ethmoids curetted; the dentist, that he should have all his teeth extracted; the otologist, that he should have a mastoid resection; the gastro-enterologist, that he should have the "cobwebs in the attic" removed; the abdominal surgeon, that he should have a gall-bladder resection and his appendix taken out; the urologist, that he should have an operation on his prostate and his "calibre" dilated; the proctologist, that he should have his hemorrhoids removed and perhaps the lower end of the intestine resected. "What would the poor man do then?" Fortunately, he is not a woman, for if the gynecologist got hold of him, the Lord only knows what the end would be. "Group medicine is not all it is cracked up to be." One of our most honored members, recently deceased, told me of a patient who came to his office, after having been to one of the highest priced diagnostic clinics and where she "took the whole course," and informed him that they told her that "her condition was due to some, as yet, unidentified germ circulating in her blood."

The business of government is not to make men or to cure them, but to give them a free chance to make themselves, and to choose their own method of being treated when sick. That was the spirit on which this government was founded. That was the practice which developed the American pioneer and which distinguishes him from the European peasant. Individualism develops a breed of strong, self-reliant, free men. Socialism is simply a crutch for the half-free, half-dependent, or wholly dependent. The demand for it in America has grown in direct proportion as the number of unassimilated aliens has increased. Educated and coerced into the belief of the super-state, always subservient to someone, always dependent upon someone, they conceive government to be omnipotent for good or for evil, and so they are easily led by agitators and demagogues in and out of office, who are always seeking to increase their power,—and their income.

The highest degree of civilization is not indicated by the city having the greatest number of hospitals, almshouses, and insane asylums; not the one having the most, but the one having the least need of them.

The State Department of Health was constituted for the following purposes: To supervise the sanitary engineering of the State; to investigate the causes of diseases; to prevent the spread of contagious and infectious diseases; to collect vital statistics; to educate the public in matters pertaining to health; to supervise child hygiene; to supervise public nursing; to supervise the tuberculous.

Therefore, its purposes being prevention, it can best accomplish the purposes of its creation by performing and adhering to these duties. The most injurious influences affecting the physical condition of young children arise from the habits, customs, and practices of the people themselves, rather than upon external surroundings or conditions. The environment of the infant is its mother. Its health and physical fitness are dependent primarily upon her health, her capacity for domesticity, and her knowledge of infant care and management. The causes of infant mortality are: Defective sanitation, bad housing, overcrowding, insufficient nutrition of the mother, want of lactation, improper feeding, maternal ignorance of what is proper care, and the hereditary result of vice; but the principal operating influence is the ignorance of the mother, and the remedy is the teaching of the mother. These duties properly belong to the Department of Health and if thoroughly and properly attended to will leave much less to do in the way of curing disease after these same children have grown up and have become adults.

Of late years there has been too great a tendency to "put it up to the government" and too little to the person himself—the socialization of everything. Every attempt at nationalization, including our own during the world-war, has resulted in inefficiency and decreased production. Have not our own personal experiences proved this? Have we forgotten the government control and operation of railroads, telegraphs and telephones? Is it not only recently that the telephone service has approximated in efficiency the standard set before the war? If we are to have governmental or state control, where are we to stop? Inasmuch as more than half the ills of mankind are due to his eating, shall we have government control and operation of all the eating places? Shall we have institutions telling us where to eat, what to eat, when to eat, how much to eat, and how to have it cooked? Shall we have public restaurants providing food without cost to all, whether they can pay for it or not? Shall we have the same condition regarding our clothing so that we shall be ordered what to wear and when we shall wear it? Will the clothes be furnished free? Do you think it will make women's dresses any lower at the bottom or any higher at the top? Shall we have our games, entertainments, and outings supervised and regulated by some supervising agency which thinks it can best apportion them to our needs? Finally, shall we have our ideas and religion supervised and regulated by public agencies? Where, then, will be the freedom of our country, of which we are so proud? Is it not about time to call a halt to all these socialistic schemes? Is not the greatest efficiency through self-interest? Are not these simply the desires of someone to "put over" schemes for "fat jobs," or are they merely the maundering expression of the weak and incompetents to directly or indirectly get something for nothing?

"What is a Socialist? One who has yearnings
For an equal division of unequal earnings;
Idler, bungler, or both, he is willing
To chuck in his kopek and gobble your shilling."

The State Department of Health has been holding itinerant health clinics in various parts of the state, and the newspaper report of the one held at Goshen, states: "In the majority of cases, the diagnoses of the local physicians were confirmed." (New York Times, Sept. 12, 1920). That being the case, what was the need of these "health clinics"? I wish, most emphatically, to register my protest against the idea that the country physicians are the ignoramuses which so many of the city residents are so fond of assuming. On the contrary, they are at least equal to, if not more competent than the average city physician. They may not know so much about any one specialty, but they have some knowledge of all the specialties and are better grounded in all-round medical practice. Being compelled to depend upon themselves, they have acquired a better understanding of the diseases that occur in their locality and how to treat them. Robert Koch, the discoverer of the tubercle bacillus, was an obscure country physician; and I am creditably informed that the "Mayo Brothers," referred to in the State Department of Health's propaganda letter, were never even hospital internes, but they settled in a small country town and have been the cause of its growth, on account of their success and fame. Moreover, this was done without any subsidized "health centres," and was due entirely to the skill and genius of these same country practitioners.

In conclusion, there is no need of "health centres" as outlined in the bill recently introduced into the New York State Legislature; but there is a great and crying need for further means of educating the public in the care and feeding of children, and in all matters pertaining to sanitation and prevention of disease.

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Malden has three mild cases of smallpox. These cases, following the case in Boston, indicate the necessity of care in explaining the importance of vaccination to careless or indifferent people.

Clinical Department.

A POSSIBLE CASE OF NEPHRITIS IN A CHILD WITH EDEMA AND WITHOUT ALBUMINURIA.

By John Lovett Morse, A.M., M.D., Boston.

Professor of Pediatrics, Harvard Medical School.

Elizabeth B., who had previously been well, began to be peevish and to want to be held, about September 10. These symptoms continued, and September 22 her eyelids became swollen and her face pale. A few days later her abdomen began to enlarge and on October 7 her legs began to swell. She vomited once in three or four days and had several loose stools daily. There had been no urinary symptoms. She was admitted to the Children's Hospital October 11, when two years and nine months old. She had had a cold in her head for about three weeks.

Her face was markedly swollen, the eyelids being so large that she could hardly open her eyes. She showed the evidences of nasopharyngitis. The heart and lungs were normal. There was no enlargement of the liver or spleen. The level of the abdomen was that of the chest. There was a dullness in both flanks, which did not shift. There was slight edema over the tibiae.

Blood: Hemoglobin, 65% (Sahli); white corpuscles, 10,000; small mononuclears, 52%; large mononuclears, 4%; polynuclear neutrophiles, 41%; eosinphiles, 3%. The red blood cells were normal in size, shape and color. The blood platelets were apparently normal. Blood Pressure—systolic, 70; diastolic, 50. Stools—Normal, macroscopically and microscopically; Tuberculin Test — Negative. Urine — Straw-color; faintly acid; 1008; no albumin, sugar or acetone. The sediment showed many epithelial cells, a few white cells and a rare red cell, but no casts. The urine was examined daily during her stay in the hospital and at no time contained any albumin. No red cells were seen after the first examination and there were never any casts. The specific gravity varied between 1005 and 1020.

She was put on a salt-free diet and the proteins limited to 25 grams daily. Fluids were limited and the bowels were moved freely with Epsom salts. All evidences of edema were gone in three days, while her weight dropped in five days from 26¼ pounds to 22 pounds. The amount of urine varied directly with the fluid intake.

The diagnosis of idiopathic edema was made and not much attention was given to the case until her brother was admitted about a month later with similar manifestations. The presence of such an unusual picture in two children in the same family made it seem worth while to study him more carefully.

Robert B. entered the Children's Hospital November 3, when he was 5½ years old. His parents and four other children, besides Elizabeth, were well. There had been no deaths or miscarriages and no history of disease of the kidneys in the family.

He was born at full term after a normal labor. He was breast fed for a year and then given a general diet. He had always been well except for influenza a year before.

His mother noticed, October 25, that his abdomen was swelling. He had complained of no pain and was well enough to be up and about. A few days later he complained of being tired and went to bed. The abdomen increased steadily in size, and November 2 his face and legs began to swell. He also began to complain of intermittent pain in the abdomen. It did not radiate downwards and there were no urinary symptoms. There was no headache or vomiting, but he was somewhat feverish. His bowels became loose about twenty-four hours before he entered the hospital. The amount of urine also diminished at this time.

He was well developed and nourished. The whole face was moderately swollen and the cheeks flushed. There was edema of both the upper and lower eyelids. His tongue was coated. The tonsils were a little large. The teeth were good. D'Espine's sign was present through the fourth dorsal spine. The right border of the cardiac dullness was 2½ cm. to the right and the left border 6½ cm. to the left of the median line. The heart sounds were normal, except for a slight systolic murmur in the pulmonic area, which was undoubtedly functional. The lungs were normal. The level of the abdomen was higher than that of the thorax. There was slight general tenderness, but no rigidity. There was dullness in the flanks, but no shifting dullness. There was no enlargement of the liver or spleen. The kidneys were not palpable, but there was marked tenderness in both costovertebral angles. There was some edema of the lower back, considerable edema of the scrotum and marked edema of the whole of both legs. The rectal examination showed nothing abnormal. There were a few small glands in the neck. His temperature was 100.4° F. It dropped to normal the next morning and never rose again.

Blood—Hemoglobin, 50% (Sahli); red corpuscles, 4,200,000; white corpuscles, 7,500; small mononuclears, 44%; large mononuclears, 2%; transitionals, 1%; polynuclear neutrophiles, 48%; eosinphiles, 5%. The red cells showed slight variation in size and color, but were normal in shape. The blood platelets were normal in number. The tuberculin test was negative. The urine at entrance was cloudy, amber in color, acid in reaction and showed a specific gravity of 1014. It contained no albumin, sugar or acetone. There were three millimeters of sediment in the tube after centrifugalization. The sediment contained mucus, a few squamous, epithelial and white cells, but no red cells. An occasional hyaline cast was seen. There were also some calcium oxalate and amorphous crystals seen. The urine the next day showed no casts.

He was put on a salt-free diet, the proteins were limited to 25 grams and his fluids to 10 ounces. He was given Epsom salts to move his bowels. He at first passed only five to ten ounces of urine daily, but the amount went up to 58 ounces on November 8 and from that time bore about the normal ratio to the fluid intake. All traces of edema were gone November 11, when he was up and about and apparently well. His weight at entrance was 39¼ pounds. It dropped to 33 pounds on November 9, where it remained for some time, gradually rising to 36 pounds at his discharge December 13. This rise, however, was not due to edema but to actual gain in flesh.

It seemed well worth while to attempt to determine the cause of the edema in these two children. The first one could not, of course, be studied, but the study of the boy was begun at once. Possible causes of edema at this age are heart disease, anemia, disease of the kidneys, malnutrition, toxemia, angioneurotic edema, perhaps as the result of anaphylaxis, lack of some of the accessory food factors, and salt retention from some cause.

His home was investigated. The parents and other children were perfectly well. The home conditions were not of the best, but there was a sufficient supply of fresh air and sun. The water supply was from the Metropolitan Water System through lead pipes. The Metropolitan water is above reproach. His urine was examined for lead and none found.

His diet was investigated and found to be sufficient in all the food elements. He had both milk and butter, with a sufficient amount of meat and fruit. There was no reason, therefore, to suspect any lack of any of the accessory food factors. The milk supply was Hood's ordinary pasteurized milk.

The mother stated that none of the children cared for salt, and that consequently she used very little of it in preparing their food. She was certain that he had never had an excess of salt. Edema from salt retention seems, therefore, very improbable.

It was found that both the boy and his sister had been eating a good many raw apples before the onset of the edema. After the edema had entirely disappeared, he was, therefore, given three raw apples to eat on two successive days. There was, however, no return of the edema, showing that the edema could not be due to sensitization to apples. This line of investigation was followed out with skin tests for anaphylaxis, and he was found negative to all the proteins which were tried. These were egg-white, egg-yolk, cow casein, beef, lamb, pork, chicken, salmon, herring, blue fish, cod, oysters, barley, wheat, spinach, walnuts, chicken feathers, cat hairs, dog hairs and horse dandruff. This list is, of course, quite incomplete, but it includes representatives of all the different classes of proteins. It seems probable, however, that if he was sensitive enough to show such a general edema, he would be sensitive to all members of any given class.

The normal condition of the heart showed that the edema could not be due to cardiac failure. While the hemoglobin was rather low, the blood did not show the evidences of a degree of anemia in any way sufficient to account for such a generalized edema.

There was nothing in his story to suggest that he was suffering from any marked disturbance of malnutrition, and, when he had lost his edema, it was evident that he was not badly nourished. The generalized edema could not, therefore, be due to simple malnutrition.

The normal temperature and the absence of any evident focus of infection seem sufficient to exclude toxemia as a cause of the edema.

It seems, therefore, as if the edema must have been due to some interference with the functioning of the kidneys, or, failing this, must be classified among the very indefinite group of the so-called "idiopathic edemas." The functioning of the kidneys was, therefore, carefully studied. As already stated, and as is shown by the accompanying chart, after the disappearance of the edema, the ratio between the intake and output of liquid was normal, showing that there was no interference with the excretion of water. The urine was examined daily during the month or more which he remained in the hospital. At no time did it contain any albumin and at no time were any red corpuscles seen. A few casts were seen at entrance and again on November 12, but at no other time. The specific gravity varied between 1008 and 1020.

Several phthalein tests were done, none of them, unfortunately, before the disappearance of the edema. The phthalein test November 11 showed: first hour, 20%, second hour, 10%; total, 30%. That done November 17 showed: first hour, 20%; second hour, 15%; total, 35%; That done December 6 showed: first hour, 30%; second hour, 20%; total, 50%; that is to say, there was considerable reduction in the phthalein excretion in the beginning, and even at the end it was somewhat below normal.

The gravity fixation test was done on two occasions. In this test two grains of caffein sodium benzoate and 15 grains of sodium chloride are given at each of three prescribed meals. Ten ounces of water are given at each meal and none between the meals.

The specific gravity of the urine is then tested at frequent intervals. The results of the tests were as follows: November 11:

NOVEMBER 11

8.00 A.M.	5 c.c.	1012
10.00 A.M.	23 c.c.	1021
12.00 M.	18 c.c.	1021
2.00 P.M.	22 c.c.	1019
4.00 P.M.	35 c.c.	1020
6.00 P.M.	67 c.c.	1016

Unfortunately, the night urine was not preserved on this occasion. The variation in the specific gravity during the day, however, was not quite as great as would be expected under normal conditions. The gravity fixation test on November 19 showed:

6.00 A.M.	35 c.c.	1015
8.00 A.M.	30 c.c.	1016
10.00 A.M.	30 c.c.	1010
12.00 M.	17 c.c.	1020
2.00 P.M.	75 c.c.	1017
4.00 P.M.	75 c.c.	1018
6.00 P.M.	25 c.c.	1015
6.00 A.M.	330 c.c.	1013

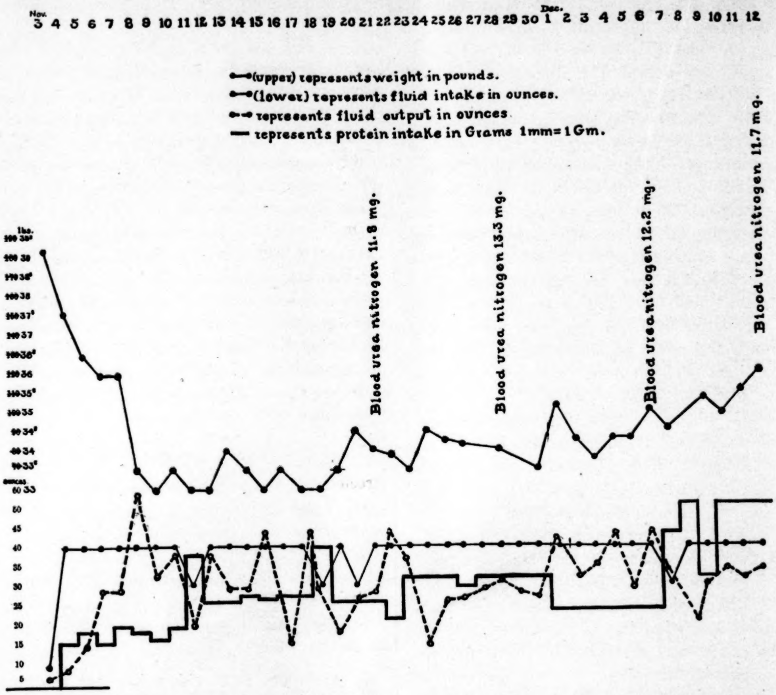
The variations in the specific gravity in this test are greater than at the first test, and show but little fixation of gravity. The results differ from the normal, however, in that the night urine was larger in amount than the day urine, and the specific gravity was lower in the night urine than during most of the day. Under normal conditions the amount of urine passed during the night is less than that passed during the day and the specific gravity is higher.

It was thought that something might be learned as to the function of the kidneys by examining the blood urea nitrogen while varying the amount of protein in the diet. The results are shown on the chart and in the following table:

Nov. 11.	Protein increased from 30 to 35 grams daily.
Nov. 21.	Blood urea nitrogen, 11.8 milligrams.
Nov. 22.	Protein increased to 40 grams.
Nov. 28.	Blood urea nitrogen, 13.3 milligrams.
Dec. 1.	Protein diminished to 25 grams.
Dec. 6.	Blood urea nitrogen, 12.2 milligrams.
Dec. 8.	Protein increased to 60 grams.
Dec. 12.	Blood urea nitrogen, 11.7 milligrams.

It is evident from this table that the blood urea nitrogen was always well below the normal limit and that there was, therefore, no nitrogen retention. The blood urea nitrogen did vary directly for a time with the amount of protein in the diet. At the end, however, when the protein given was at its maximum, the blood urea nitrogen was at the minimum.

It is evident from these investigations that there was some interference with the excretory functions of the kidneys. It is possible that there may have been more interference with them at that time when the edema was marked. The evidences of interference with the excretory functions of the kidneys are, however, so slight that they hardly seem sufficient to account for the symptoms. They are, moreover, rather inconsistent. It is, furthermore, very difficult to understand from them what pathological condition could have been present in the kidneys, when it is remembered that the urine at no time contained any albumin or red cells, and only on two occasions a few casts. In this connection, it must also be remembered that it is extremely common to find an occa



sional cast in the centrifugalized sediment of the urine of children, ill from any disease or even apparently well.

The blood pressure, tested November 19, showed that the systolic pressure was 78 and the diastolic 55, that is, below rather than above the average at this age. This finding is inconsistent with any marked disease of the kidneys.

The literature on nephritis in children contains various references to nephritis without albuminuria. The earliest report is probably that by Litten (*Charité Annalen.* 1882. *Jahrg.*, VII, 162), who found a severe hemorrhagic nephritis in an adult with marked edema, whose urine showed no albumin, but an occasional cast. Henoch (*Vorlesungen über Kinderkrankheiten,* 1895, p. 394), in discussing nephritis after scarlet fever, reports cases of acute hemorrhagic nephritis, proved by autopsy, in which the urine contained no albumin and only a few renal elements. He also reports cases, proved by autopsy, with edema and a normal amount of urine, but without albumin or renal elements in the urine. Cassel (*Berlin. klin. Woch.*, 1900, XXXVII, 213) reported nine cases of nephritis without albuminuria in babies from 7 weeks to 2½ years old. Two of them were shown by autopsy to have had parenchymatous nephritis, although no albumin or casts were found in the urine at any time. He reviews all the literature up to that time. He also believes that children can have edema without nephritis or other of the usual causes. Bellico (*Rivisti, di Clin. Pediat.*, 1905, No. 10) quoted by Dickinson (*British Jour. of Child. Dis.*, 1906, III, 163) and Parkinson (*British Jour. of Child. Dis.*, 1916, XIII, 138) have reported similar cases. Senator (Nothnagel's *Encyclopedia of Prac. Medicine,* 1905. Vol. on Diseases of the Kidney, pages 85-87)), in discussing edema in nephritis, mentions and criticises the various theories. He says that edema is much more common when the glomeruli are involved. This is because the capillaries of the glomeruli are involved by toxic substances in the blood before the other parts of the kidney, they being more easily affected. If it was simple interference with the excretion of water, edema would occur just as easily when the tubules are involved first, but this is not the case. Edema occurs only when the blood and lymph vessels of the skin are also involved by toxic substances in the circulation. The vessels in the skin and capillaries are more sensitive than the tubules. It is possible that the vessels of the skin may be involved before the capillaries of the glomeruli, or be the only ones involved.

If nephritis can occur without albuminuria and with no, or very few renal elements in the urine, and if nephritis of this type can be accompanied by edema, as is stated by the authorities just quoted, it is possible that the edema in these children may have been a manifestation of nephritis. The interference with the elimination of phthalein and the peculiarities shown in the gravity fixation test in the case of the boy, lead some probability to such a possibility. The absence of any other evident cause for the edema, in spite of careful search, is negative evidence in favor of this possibility. Senator's explanation of edema on the basis that toxic poisons may affect the vessels of the capillaries of the glomeruli and the skin before the tubules, thus without diminishing the amount of urine or causing albuminuria, seems more or less reasonable. Nevertheless, in this instance, at any rate, there being no other evidences of toxemia or any cause for it, it is rather hard to believe that there could have been a toxemia severe enough to injure the capillaries of the kidneys and skin, to the extent necessary to produce so much edema without causing a rise in temperature and other manifestations of toxemia. It does not seem justifiable, therefore, to make a positive diagnosis of nephritis with edema and without albuminuria in this instance, although such a diagnosis is certainly suggested. It is, perhaps, safer to class it under the unsatisfactory head of idiopathic edema.

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DR. STEPHEN SMITH, first president of the A. P. H. A., now ninety-eight years old, will welcome members of the Association at the fiftieth annual meeting next November. Dr. Smith is described as young in physique and spirits.

NEWS FROM DISTRICT SOCIETIES.

HAMPDEN DISTRICT MEDICAL SOCIETY.—The annual metting of the Society was held at the Springfield Academy of Medicine, 137½ State Street, Springfield, on Tuesday, April 26, at 4 P.M.

Regular business and election of officers for the ensuing year.

Paper:—Right and Wrong Uses of Diuretics. —Dr. Henry A. Christian, Physician-in-Chief, Peter Bent Brigham Hospital, Boston.

Discussion. Luncheon at expense of Society.

The Censors meet for examination of candidates, on Thursday, May 5, at 4 P.M., at Springfield Academy of Medicine.

WORCESTER MEDICAL MILK COMMISSION.—At the annual meeting of the Medical Milk Commission of Worcester, Mr. Fred A. Walker, Esq., was elected president and Dr. Ray W. Greene, clerk. The executive committee consists of the president, clerk and Prof. Walter L. Jennings.

The Commission is now giving its approval to the milk from the Hampshire Hills Farm of Wilton, N. H., as "certified milk," and to the milk from the Sibley Farm in Spencer, Mass., as "inspected milk."

MEMORIAL HOSPITAL STAFF ASSOCIATION.—The monthly clinical meeting of the Memorial Hospital Staff Association of Worcester was held at the Hospital, Friday evening, April 22, 1921.

The following papers were read: Double-headed Monsters, Dr. Winifred Grant; Intestinal Obstruction in Infants, Dr. Walter C. Seeley; Scoliosis, Dr. Charles E. Ayres; An Unusual Case of Nephritis and Acute Encephalitis During the Course of Chronic Nephritis, Dr. Oliver H. Stansfield.

DR. E. H. BIGELOW of Framingham has been elected president of the Middlesex South District Medical Society, for the ensuing year.

THE APRIL MEETING OF THE BROCKTON MEDICAL SOCIETY was held April 14, 1921. The Brockton Dental Society was the guest of the Medical Society. Dr. H. H. Hartung, examining surgeon for the Aetna Insurance Co., read a paper under the title of "Medical Legal Phases with Particular Reference to Malpractice Suits." There were two hundred physicians and dentists present.

THE BOSTON
Medical and Surgical Journal
Established in 1828

THURSDAY, MAY 5, 1921

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

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SUBSCRIPTION TERMS: *$6.00 per year, in advance, postage paid for the United States, $7.56 per year for all foreign countries belonging to the Postal Union*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the printer with galley proof of paper. Upon written request, authors will be funished free one hundred eight-page reprints, without covers, or the equivalent in pages in articles of greater length.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

LEGISLATION RELATING TO MEDICINE.

THE time in which effective influence may be exerted on legislative action relating to medical practice and public health has passed for this session.

The reactions of the legislature to many measures presented by physicians has been adverse. This winter's experience has been very much like that of preceding years. The legislature of Massachusetts has acquired the reputation of being conservative in its treatment of bills, directly or remotely, relating to the efficiency of physicians and standards of medical education. Although freak bills, such as those applied to the regulation of the heels of Women's shoes, have been quickly disposed of, serious recommendations designed to raise the standards of medical practice have, with one exception, received adverse action. Matters which have led to disputes among physicians, as the maternity bills, are not referred to, because it was to be expected that a body of laymen would shrink from enacting into law, bills which have caused dissention in the ranks of the profession. But when a bill is presented which represents the trend of events and is supported by reputable physicians and recognized experts, and which is rejected, one may be pardoned for failure to understand the working of a legislator's mind.

In order to profit by experience, those who have the responsibility of representing the profession should study the conditions which influence the attitude of members of the General Court toward the recommendations of physicians. It is possible that the medical profession is loosely organized in its campaign for constructive legislation. It is true that the Massachusetts Medical Society and the Massachusetts Homœopathic Medical Society have a joint legislative committee. This committee meets in the autumn and creates an auxiliary committee representing the senatorial and representative district throughout the state. These committees are called together and such proposed legislation as has been formulated is discussed and approved or opposed, as the case may be. Afterward it has been found that there is difficulty in securing attendance at meetings, the probable reason being that most of the men living at a distance feel that the presidents of the societies and their immediate associates will attend hearings and give such advice as the subject under discussion warrants. It is true that the central committees send circulars of information to the members of the auxiliary committee, but there has seemed to be little evidence of effective work.

Everybody concedes that the great body of law makers are honest men, actuated by a firm sense of duty, and a determination to enact laws which will meet the approval of the masses; and right here the great element of chance comes in, for the legislature is besieged by people who are sincere, but who are not always able to determine what is good and what is bad, but whose evident honesty, together with support of associates equally illogical confuse the minds of legislators, and when arguments of proponents seem to offset those of proponents, endorsement of a good measure is denied.

One should put himself in the place of the legislator in order to understand his reactions. His mind is burdened with a multitude of somewhat complex questions with opposing forces contending for his support. He cannot take time to ascertain the attitude of his constituents and hence he sometimes drifts with the current set in motion by some forceful person.

Like most people, he is vulnerable to the malign suggestion of trust, to abuse of power, or a desire to crush out weak organizations, and is unconsciously swayed by such claims.

The unpleasant and often unproductive attempt to influence legislation, has led some men to propose that medical organizations should retire from the field and let the people act unguided and uninspired. It is argued that physicians know how to protect themselves and that effort to secure public health measures is a thankless task unless the people ask for protection. On the other hand, can physicians with understanding remain quiet, when there is danger to public health, or possibility of fraud?

If anything is to be accomplished there must be organization and intensive effort. We can profitably learn from politicians that the time to inaugurate a movement is in advance of conflict and if future members of the legislature are to know the wishes of their constituents, there should be laid a foundation of knowledge. Every well qualified physician should be engaged in securing the support of his community for those measures which lead up to more efficient practice and the discard of pernicious or selfish ambitions.

The time to act is now. The disappointments of this legislative session are fresh in mind. The people will demand support of progressive medical legislation, if informed. Let the legislative committees enter upon a campaign of education in every community, taking, for example, the benefits of vaccination, the need of well educated and trained practitioners, and such other questions as have met the unanimous approval of the profession.

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MEDICAL NOTES.

IN order that physicians may know facts, the JOURNAL will publish such items as may be helpful in teaching the laity.

BANQUET FOR VISITING MEDICAL WOMEN OF THE A. M. A.—On Wednesday, June 8, 1921, the Medical Women of Boston, have arranged for a banquet for the Medical Women attend- the A. M. A. at the Hotel Vendome, at 6 P.M. Tickets $3.00. In order to facilitate arrangements, those wishing to attend are requested to notify Dr. Florence W. Duckering, 520 Beacon Street, Boston, Mass., on or before June 1. Tickets may be obtained at the registration booth at headquarters on June 6.

THE ELECTION OF MAJOR GENERAL WOOD to the presidency of the University of Pennsylvania, forcasted for several weeks, was consummated April 18, 1921. The title to be conferred is held in abeyance pending amendment to statutes. It is reported that the trustees intend to arrange for a division of the administration and educational policies. The arrangement is said to be the first of its kind in America. The Boston friends of General Wood will be pleased with the recognition of his executive ability shown on many occasions.

THE NATIONAL SAFETY COUNCIL will hold its annual congress in Boston next September, in response to an invitation from the Massachusetts Safety Council. It is difficult to realize that nearly three times as many of our people were killed by accidents, as the number of American soldiers killed in the European War in the same period. This frightful loss of human life goes on and causes little comment except by those who are studying this waste of life. Fortunately, competent men are devoting their lives to the problems incidental to accidental deaths, and Massachusetts has taken an advanced position in this movement.

THE HAVERHILL RED CROSS has established three well baby clinics, a milk-at-cost station, but distributes milk free to those unable to pay for it. Nutrition squads have been formed so that children showing evidence of underfeeding may be dealt with. The financial depression is reported to have been responsible for evidences of malnutrition.

MASSACHUSETTS GENERAL HOSPITAL STAFF MEETING.—A meeting of the staff was held on Monday evening, April 25. Dr. J. C. Aub, Assistant Professor of Physiology in the Harvard Medical School, spoke on the adrenals. Dr. Aub called attention to the fact that the adrenal consists really of two distinct glands—the cortex and the medulla. The medulla, or central portion, is derived embryologically from the sympathetic nervous system. It is innervated by the sympathetic nervous system, and secretes adrenalin, which reinforces the action of the sympathetic nervous system. So far as we know, its sole function is the secretion of adrenalin. The function of the medulla can be practically eliminated by destroying its innervation. Such action does not cause the death of the animal. There is no laboratory evidence that the height of the blood pressure depends upon the amount of adrenalin secreted. The cortex, on the other hand, is essential to life. Very little is known of its function. Forty per cent. of the adrenal gland is composed of lipoids; these are mostly in the cortex. The lipoids of the cortex are not diminished in fat-wasting diseases. The cortex seems to be a factor in cholesterin metabolism. One observer has produced ateriosclerosis in rabbits by feeding cholestrin. It has been noted that influenza cause lesions in the cortex, a fact which may account for the lassitude so commonly felt after influenza. Diseases of the cortex, such as tumors, cause precocious sex development, and in the female, an assumption of secondary masculine characteristics. Removal of both adrenal glands in cats is followed by death in a few days. The animals manifested lassitude and anorexia, but appeared contented. They are capable of a single effort, such as a leap, but cannot maintain action.

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Correspondence.

HUMAN VIVISECTION.

1729 Chestnut St., Philadelphia, Pa.,
April 5, 1921.

Mr. Editor:—

In *The Starry Cross* (the Philadelphia Antivivisection journal of which Mr. R. R. Logan is the editor), for March, 1921, is an article of about 2500 words by the associate editor, Mrs. M. F. Lovell, entitled "An Answer to Dr. Keen."

This answer is to my article on "Vivisection" in *The Country Gentleman* for February 12, 1921. In this article, I quoted Mrs. White's much earlier proposal for "Experimenting on human beings." Mrs. Lovel begins by saying: "One of the most common of these [gleams of virtue] is a reluctance to criticize the dead, and seldom , indeed, except by the most unscrupulous, is a direct accusation brought against one who, being no longer in this life, is unable to refute it." As to this general assertion, I need only remark that Pasteur, Lister, Claude Bernard, Brunton, Behring, and scores of other research workers, are constantly "accused" by antivivisectionists, without number, of cruelties and other faults. It is the current coin of their literature. Yet all of these men are "no longer in this life and [are] unable to "refute" such accusations. It seems, then, that it is a crime to criticize a dead antivivisectionist, but a virtue to lash and misrepresent a dead experimenter. Does not the old adage say, "What is sauce for the goose is sauce for the gander"?

As to the positive inference that I had refrained from accusing Mrs. White of advocating human vivisection while she was living, and only did so, when, being dead, she could not reply, it is absolutely incorrect. I accused her over four years before her death and she, herself, quickly published two replies to my charge, one in the Boston Medical and Surgical Journal, and the other in the *Journal of Zoöphily*.

Recently, I passed my eighty-fourth birthday. Though Mrs. Lovell does not mention this, she undoubtedly had in mind my impending (and, I may add, *sotto voce,* my undoubtedly welcome) demise. In view of the uncertainty of my life (*sic*), she thinks, before death stills my pen and voice, I ought to retract the statement that Mrs. White advocated human vivisection. On the contrary, I reaffirm it and call the then living Mrs. White as my witness.

Let us see just what Mrs. White *did* say in 1886, in her "Reply" to my address, "Our Recent Debts to Vivisection." Referring to the 20,000 annual deaths from snake bite in India, she proposed that the "experimenters go to India, where they could find as large a field for investigation as they require in the *poor victims themselves.* Here is an opportunity such as is not often afforded of EXPERIMENTING UPON HUMAN BEINGS, since, as they would infallibly die from the snake bites, there *can be no objection* to trying upon them every variety of antidote that can be discovered." (I use italics and capitals not to change the sense, but solely for emphasis.) If I understand the English language, advocating "experimenting on human beings" is flat-footed advocacy of "Human Vivisection." It can mean nothing else.

In the Boston Medical and Surgical Journal, May 2 and 9, 1912, is printed a later address of my own, entitled "The Influence of Antivivisection on Character." In this address, I quoted Mrs. White's suggestion of 1886 of "experimenting on human beings" bitten by snakes. To this address, Mrs. White herself replied in a 3500 word letter (Boston Medical and Surgical Journal, July 25, 1912). Let us see what was her own reaction *more than four years before her death* (September 7, 1916) to my quoting her proposal. Did she declare that I was "unscrupulous" and deem it an "aspersion" on her character? Not a bit of it! She not only did not resent my quoting and interpreting her own words, but, after having had twenty-six years to reflect upon her proposal to "experiment upon human beings," she gallantly stood by her guns and defended it! Her own words are (Boston Medical and Surgical Journal. July 25, 1912): "It does not seem to me that this is a cruel suggestion, as my only object in it was to benefit the poor natives who die by the thousands every year!"

If Mrs. White, while living, did not resent my quoting her own words, as "aspersing" her character, why should Mrs. Lovell and Mr. Logan now so violently resent it?

But let us search a little further and consult the *Journal of Zoöphily* (the former name of what is now *The Starry Cross*), itself the organ of the antivivisectionists themselves. In 1912, Mrs. White was the editor and Mrs. Lovell, as now, "associate editor" of that journal!

In the issue for September, 1912, page 380, I find that Mrs. White's letter, first published in the Boston Medical and Surgical Journal, of July 25, 1912, is reprinted in full, under the title "The Self-defense of an Antivivisectionist." So here, in Mrs. White's and Mrs. Lovell's own *Journal*, Mrs. White failed to resent my suggestion that she favored "experimenting on human beings," but, actually, after years of reflection, defended it.

By entirely omitting any mention of the facts that the address in which I had quoted her was published four years and four months *before* Mrs. White's death, and that she, herself, replied to it in print, not only in the Boston Medical and Surgical Journal, but in the very journal of which Mrs. Lovell was, and still is, the associate editor,—by ignoring these facts Mrs. Lovell and Mr. Logan give the wholly false impression that my charge that she had made a flat-footed proposal to "experiment on human beings" was not made until after her death when she could not reply. If Mrs. Lovell and Mr. Logan knew of her two replies, they concealed the truth from their readers. If they did not, they were lamentably ignorant of the literature relating to their own business and to the contents of their own journal. In either case, it is they who should make a retraction and offer me an apology for such a misrepresentation.

The outstanding feature of all antivivisection literature, as to medicine, is that they "know it all." My friends and I, who have diligently studied and taught and practised medicine for forty, fifty and sixty years, deplore our ignorance about many things as to which we long for more light. We wish by all possible means, including animal experimentation, to obtain this additional light. We do know enough, however, to say that Mrs. Lovell's oracular statements as to typhoid fever, yellow fever, smallpox, sanitation and the "stupendous folly of germ hunting" are utter nonsense.

"Yellow fever, like typhoid, is a filth disease. Remove the filth and you remove the cause," is one of her bold assertions.

This assertion is not true. They are two diseases, each caused by its own specific "germ" and by nothing else. The fact is, you may like in a filthy hovel and may develop other diseases, but you will not develop typhoid unless there are *typhoid germs* in the food you eat and drink. In the same filthy surroundings, you will *not* develop yellow fever unless there are infected mosquitoes to bite you.

On the contrary, you may live in Mrs. Lovell's own home, with spotless ultra-sanitary surroundings, but if you eat solid food over which have crawled flies with typhoid germs on their little feet, or drink water or milk which has no smell and which looks and tastes and appears to be entirely wholesome but which contain the "germs" of typhoid, you will fall a victim to typhoid. If, in similarly perfect surroundings, you are bitten by an infected mosquito, you will be attacked by yellow fever.

But Mrs. Lovell may say this is exactly the "filth" that she refers to. I grant it at once and point out that this filth is composed of the bacilli of typhoid fever. Mrs. Lovell, if she makes that statement, at once concedes my contention that typhoid fever is caused, not by filth *per se*, but by filth which contains the germs of typhoid.

The *Boston Journal* gave place in its issue of July 11, 1912, to a short letter from Mr. Stephen Coleridge, criticizing my address of 1912, and again, on July 25, 1912, it published Mrs. White's long letter. The editor then said: "It is only just that these two communications should appear in the *Journal*, since the cause of truth is never better served than by the free expression and fair hearing of diverse opinions about it."

As soon as I read Mrs. Lovell's attack upon me, I requested the editor of *The Starry Cross* to allow me equal space for a reply. He curtly "advised" me that "'the columns of the *Starry Cross* are not open to articles favoring vivisection, or intended to asperse the memory of its founder."

As *The Starry Cross* refuses to let the light penetrate the minds of its readers, I am asking the courtesy of your columns as you believe that truth is best attained by hearing both sides.

Yours truly,
W. W. Keen.

RATES FOR DOCTORS' TELEPHONES.

173 School Street, Milton, Mass.
April 25, 1921.

Mr. Editor:—

In regard to the proposed increase of rates for physicians' use of the telephone by listing them under business rates, I find that in my own instance this is going to make an increase of about 50%, which I assume is an average, and without material benefits accruing thereby to the Telephone Company. The argument that the names of doctors will be classified in the back of the directory under "physicians and surgeons," does not practically work out to the advantage of either the patient or doctor, as witnessed by a recent experience in which a patient called me to ask the name of a well knows oculist, the spelling of whose name did not conform to the usual, at least in her mind, and she did not turn to the business directory for further information. Moreover, in the last few years, the change to smaller type and the multiplicity of names of those who are subscribers in the telephone directory, make the task of ferreting out names and numbers increasingly difficult, so that it occurs to me that we, as physicians, have much to gain if we allow our names to be published under the residence rates, and for the benefits of the people and ourselves get out a doctors' directory of our own which we can buy at cost and distribute to our patients according to our several communities.

Since this proposal of the Telephone Company is to cover all of its territory in New England, it might be of interest to our fraternity in other states than Massachusetts that their state medical societies, as ours, should take this matter up and serve their members and the patients who depend upon them, better than it is possible to be served under existing, or proposed, conditions by the N. E. Tel. & Tel. Co.

As directories are of passing interest, whether medical or telephone, it would need semi-yearly revision, or thereabouts, but enacted as a State Medical Society measure, it might well be done and receive the universal support of the medical practitioners at a great financial saving to themselves and to the real benefit of those who would find use for such a Directory. It is undoubtedly a fact that many subscribers have put in telephones that they might be able to call upon doctors in case of emergencies and for this single reason it seems to me unjust that this company should attempt to capitalize, at our expense, the assets that the medical profession has brought it.

Yours very truly,
Walter A. Lane, M.D.

IMPORT DUTIES ON TOOTH BRUSHES.

New York City, April 25, 1921.

Mr. Editor:—

The attention of the Oral Hygiene Committee of Greater New York has been called to the fact that in the new tariff bill is a clause which increases the duty on imported brushes. This includes imported tooth brushes.

Tooth brushes are essential in the maintenance of mouth hygiene, and mouth hygiene is closely related to health, therefore, any duty which increases the cost of tooth brushes will work a hardship upon a large class of our people. Parents of large families will find it difficult properly to provide their children with this necessary article of mouth cleanliness.

Our committee respectfully requests your coöperation. We ask your readers to send letters to their congressmen and senators, protesting against any increase of duty upon imported tooth brushes; and we earnestly request that tooth brushes be placed on the free list, as they are by no means luxuries, but articles of ncessity for the health and welfare of the people.

Respectfully yours,
Thaddeus P. Hyatt, *Chairman.*

NOTICES.

EXAMINATION BY THE NATIONAL BOARD OF MEDICAL EXAMINERS.

The National Board of Medical Examiners will hold an examination in Boston, June 14 to 21, inclusive.

Subjects: Anatomy, Clinical Physiology, Physiological Chemistry, Pathology, Bacteriology, Materia Medica and Therapeutics, Medicine, Surgery, Obstetrics and Gynecology, Hygiene and Sanitation. The certificate of the National Board is accepted as equivalent to a professional examination by the Federal Services and a large majority of State Medical Examining Boards.

Eligibility for examination: A four-year high school course, two years of acceptable college work, including physics, chemistry, biology and a modern foreign language; graduation from a Class A medical school, and one year as interne in an acceptable hospital or laboratory; application for examination will be considered from interne who had completed at least six months of interne service.

Applications should be made before May 25, to allow for proper investigation of credentials.

Information and application forms may be obtained from Dr. Horace D. Arnold, 520 Commonwealth Avenue, Boston. Dr. Arnold may be seen at his office from 4 to 5, Mondays, Wednesdays and Fridays, until May 25, or by appointment.

New England Pediatric Society.—The seventieth meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, May 13, 1921, at 8.15 P.M. The following papers will be read: The Pediatrician and the Mentally Defective Child, Walter Fernald, M.D., Waverley; The Physiology, Feeding and Care of Premature Babies, William W. Howell, M.D., Boston; Abdominal Tuberculosis in Infancy and Childhood. William E. Ladd, M.D., Boston. Light refreshments will be served after the meeting.

Henry I. Bowditch, M.D., *President*,
Lewis W. Hill, M.D., *Secretary*.

Hearing on Telephone Rates.—Upon the petition of the Somerville Medical Society, protesting against the change in classification of telephone service for physicians by the N. E. Tel. & Tel. Co., the Commission will give a hearing at its hearing rooms, 166 State House, Boston, May 12, 1921, at 10.30 o'clock in the forenoon.

The presence, personally, at this hearing of all physicians who feel that the Public Utility Commission should refuse to allow the change, will be a great help, but, if impossible to attend, a strong letter of protest should at once be sent to the Commission by each individual physican. Address all letters of protest to the Public Utility Commission, State House, Boston, Mass. If the senator and representative of your district feel that the proposed discrimination against the physicians is one that should be prevented, and can become interested enough to also write to the Commission, much good will be accomplished. To prevent your yearly bill for telephone service from being greatly increased, or the alternative of being compelled to pay a measured rate instead of an unlimited residence rate, you must act at once.

Massachusetts General Hospital.—Staff clinical meeting, lower out-patient amphitheatre, Monday, May 9, 1921, at 8 P.M. Program: 1. Interpretation of Pyelogram. E. Granville Crabtree, M.D.; 2. A Report of the Dermatological Cases Treated with X-ray, C. Guy Lane, M.D.; 3. A Preliminary Report of the Findings of 2000 Gastro-intestinal Examinations Made During the Year 1919. A. S. Merrill, M.D.; 4. Some Observations on the Results of Treatment of Carcinoma of the Breast with the X-ray, K. F. Kesmodel, M.D. Doctors, nurses and medical students invited. F. A. Washburn, M.D., *Resident Physician*.

Medical Veterans of the World War.—There will be a meeting of the Association of the Medical Veterans of the World War on the day preceding the meeting of the scientific sections of the American Medical Association, the time and place to be announced later. Col. V. C. Vaughan is president of the Association, and Col. F. F. Russell, U.S.A., secretary. All medical officers, contract surgeons of the U. S. Army, and acting assistant surgeons in the United States Public Health Service, who have served in the Medical Corps of the United States Army, United States Navy and United States Public Health Service, and all members of medical examiners of local, medical advisory and district boards, officially appointed by the President of the United States, the Provost Marshall General of the United States Army, and the Governors of the various states are eligible to membership in this organization. The object of this Association "is to perpetuate fellowship, to prepare history, secure coöperation for the mutual benefit of the medical men who served in the World War, 1914-1918, and for the mutual improvement and social intercourse of its members."

The American College of Physicians has established the Massachusetts Section of the Clinical Congress. The first meeting will be held in Springfield, May 13 and 14, 1921.

The Norfolk District Medical Society.—Seventy-first annual meeting, American House, Boston, May 10, 1921, 5.30 P.M.

Nominating committee's list of nominations for 1921-22: President—Dr. C. D. Knowlton, Roxbury. Vice-President—Dr. John P. Treanor, Dorchester. Secretary—Dr. Bradford Kent, Dorchester. Treasurer—Dr. G. W. Kaan, Brookline. Commissioner of Trials—Dr. M. V. Pierce, Milton. Nominating Councillor—Dr. A. N. Broughton, Jamaica Plain, Dr. D. N. Blakely (Alternate), Brookline. Censors—Dr. C. F. Stack, Supervisor (Acting), Hyde Park, Dr. E. T. Rollins, Jamaica Plain, Dr. T. J. Murphy, Roxbury, Dr. G. G. Bulfinch, Brookline, Dr. A. A. MacDonald, Dorchester. Councillors—Dr. C. E. Allard, Dorchester, Dr. W. B. Batchelder, Dorchester, Dr. E. H. Baxter, Hyde Park, Dr. D. N. Blakely, Brookline, Dr. E. J. Breaton, Dorchester, Dr. J. P. Broderick, Jamaica Plain, Dr. A. N. Broughton, Jamaica Plain, Dr. J. A. Ceconi, Dorchester, Dr. T. F. Greene, Roxbury, Dr. W. H. Greene, Roxbury, Dr. W. A. Griffin, Sharon, Dr. R. W. Hastings, Brookline, Dr. C. F. Jillson, Jamaica Plain, Dr. G. W. Kaan, Brookline, Dr. W. B. Keeler, Roxbury, Dr. Bradford Kent, Dorchester, Dr. F. P. McCarthy, Milton, Dr. M. V. Pierce, Milton, Dr. H. H. Powers, Brookline, Dr. Victor Safford, Jamaica Plain, Dr. G. H. Scott, Roxbury, Dr. C. F. Stack, Hyde Park, Dr. Max Sturnick, Roxbury, Dr. Augusta Williams, Brookline.

Dinner, 6.15 sharp. After the dinner the addresses will be given by Benjamin Loring Young, Speaker of the House of Representatives, and Timothy Leary, M.D.

G. W. Winchester, *President*,
Bradford Kent, *Secretary*.

RECENT DEATHS.

Dr. John Gavin Morris, a Fellow of the Massachusetts Medical Society, died at his home in South Boston, April 14, 1921, aged 65 years. The son of Dr. Patrick Morris, one of the best known druggists of Boston, John Gavin was born in that city, March 26, 1856. He attended the Lincoln School in South Boston, the Boston Latin School and Harvard College, where he was graduated in 1879. Going to Harvard Medical School, he received his M.D. in 1882, and began practice in South Boston at once. In 1889 he joined the Massachusetts Medical Society. At one time he was visiting physician to St. Elizabeth's Hospital, when it was at 61 West Brookline Street.

Dr. Morris, who was unmarried, is survived by three brothers, one of them being Dr. George P. Morris of South Boston.